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## (12) United States Patent El-Ghoroury et al.

## (54) SPATIO-TEMPORAL LIGHT FIELD CAMERAS

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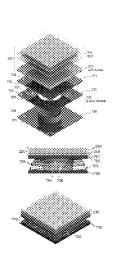
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## (57) ABSTRACT

Spatio-temporal light field cameras that can be used to capture the light field within its spatio temporally extended angular extent. Such cameras can be used to record 3D images, 2D images that can be computationally focused, or wide angle panoramic 2D images with relatively high spatial and directional resolutions. The light field cameras can be also be used as 2D/3D switchable cameras with extended angular extent. The spatio-temporal aspects of the novel light field cameras allow them to capture and digitally record the intensity and color from multiple directional views within a wide angle. The inherent volumetric compactness of the light field cameras make it possible to embed in small mobile devices to capture either 3D images or computationally focusable 2D images. The inherent versatility of these (Continued)



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